Department of Toxic Substances Control

Matthew Rodriquez
Secretary for
Environmental Protection

Barbara A. Lee, Director
5796 Corporate Avenue
Cypress, California 90630

Edmund G. Brown Jr.
Governor

July 28, 2016

Mr. Bruce Bailey
Center for Community Action and Environmental Justice
P.O. Box 33124
Riverside, California 92519

RESPONSE TO E-MAIL QUESTIONS DATED APRIL 11, 2016 REGARDING RIVERSIDE AGRICULTURAL PARK, 7020 CREST AVENUE, RIVERSIDE, CALIFORNIA

Dear Mr. Bailey:

Below are the responses to your questions in your April 11, 2016 e-mail regarding air monitoring activities. Because the topics of some questions overlap, the responses are grouped by common topics:

Overview of Previous Site Remediation Activities

In July of 2006, Frey Environmental (Frey) prepared a *Revised Response Plan, Excavation of Soils Containing PCBs* (Response Plan) dated July 20, 2006. The Response Plan described the procedures and practices to conduct additional assessment activities and remove and dispose of soils which contain chemicals of concern, including polychlorinated biphenyls (PCBs), from the Riverside Agricultural Park. In consideration of the intended development of the property for residential purposes, a target remediation goal of 0.22 milligrams per kilogram (mg/kg), equivalent to 0.22 parts per million, was established for PCBs. Site remediation activities, including excavation, removal and disposal of soil, were performed in two separate phases to date, as described below:

- Phase 1 Removal Activities-The Phase 1 Removal Activities were performed between April 29 and July 14, 2009, and targeted removal of soil containing PCB concentrations greater than 50 mg/kg. A total of approximately 8,666 tons of PCB and/or metals-impacted soil were transported offsite during the Phase 1 remediation activities.

- Phase 2 Removal Activities-Phase 2 Removal Activities were completed between July 12, 2013 and January 30, 2014 and included excavation, removal, and

disposal of soil containing PCB concentrations in excess of 0.22 mg/kg. Approximately 165,227 tons of soil was removed during the Phase 2 remediation activities.

A Workplan for Air Monitoring was included in Appendix E of the 2006 Response Plan, and was followed during both Phase 1 and Phase 2 removal activities. The current Air Monitoring Plan Addendum has been prepared for the upcoming Phase 3 cleanup to address residual PCB contamination present at select locations of the property. The draft Addendum has been reviewed by DTSC, the U.S. Environmental Protection Agency (U.S. EPA), the California Environmental Protection Agency (Cal/EPA), and the South Coast Air Quality Management District (SCAQMD) and has incorporated all agency concerns. The final version will be approved by DTSC prior to implementation of the excavation.

Dust Action Level

For this project, a Community Action Level of 7×10^{-5} milligrams of PCBs per cubic meter of air (mg/m^3) was selected, based on the non-cancer chronic ambient air value of 7.3×10^{-2} (or 0.073) micrograms per cubic meter ($\mu g/m^3$) for PCBs from the U.S. EPA Preliminary Remediation Goals (PRGs; 2004). The use of the chronic air value as the Action Level for PCBs was highly protective of the surrounding community because the durations of the removal activities were only several months (two and six months for Phase 1 and 2, respectively) while U.S. EPA defines chronic exposure to be 7 years or longer when establishing the PRGs. A longer exposure time is generally associated with a lower number for an action level, so using a seven-year action level goal for an action that took less than six months is both conservative and protective. Additionally, the maximum concentration of PCBs detected in soil was conservatively used in the calculation of a health-based dust concentration limit (DCL), and the lower dust concentration limit of 7 $\mu g/m^3$ utilized during Phase 1 and Phase 2 removal activities reflected the highest PCB concentration (9,560 mg/kg) in soil that existed prior to the Phase 1 work. The higher dust action level for Phase III activities is reflective of the significant reduction in the maximum PCB concentration (500 mg/kg) in soil following the Phase 1 and Phase 2 soil removal efforts. The assumption that all the soil at the site was contaminated at the maximum concentration of 9,560 mg/kg, while untrue, was used in order to establish a clear worse-case scenario. All other measured concentrations of PCBs at the site were less than 9,560 mg/kg, and most were significantly lower. The intent of using a single maximum concentration to represent all other concentrations, even though it is not a true scenario, is to ensure an action level that is both conservative and protective.

Following the same methodology for dioxins, using the Community Action Level of 7×10^{-9} milligram per cubic meter (mg/m^3) identified in Appendix E of the Response Plan and the highest dioxin concentration of 0.0084 mg/kg detected in soil, the health-based DCL for dioxins is approximately 830 $\mu g/m^3$. Because the DCL for dioxins is higher than

the DCLs for PCBs for the Phase 1 and 2 removal activities and for the upcoming Phase 3 cleanup, the Dust Action Levels selected for PCBs are protective for presence of dioxins in dust as well.

Dust Monitoring

Real-time dust monitoring was performed during Phase 1 and Phase 2 removal activities using Thermo-Scientific DataRAM 4000 particulate monitors. These monitors detect the presence of particulate matter with a mean particle diameter of 10 microns or less. The diameter of 10 microns or less is chosen because that is the particulate fraction that is considered to be respirable. At the beginning of each work day, the wind speed and wind direction were determined from the Davis Vantage Pro 2 Weather Station and a Kestrel 3000 pocket wind meter. One particulate monitor was installed on the site at a location upwind of the work area and another particulate monitor was installed downwind of the work area. In the event that the wind direction changed during the course of the day, the locations of the upwind and downwind monitors were adjusted accordingly.

In addition to continuously logging the particulate concentration in air, the monitors were manually checked on an hourly basis and data recorded in field data sheets. The water application rate and/or frequency were increased when the 1-hour difference between the upwind and downwind monitors was greater than the dust action level during Phase 1 and Phase 2 removal activities. As discussed in the Air Monitoring Plan Addendum, dust monitoring will be conducted using Met One Instruments E-BAM portable beta attenuation monitors during the Phase 3 removal activities. Additional information on dust control is discussed in the section below.

Dust Control

Construction activities, including excavation and soil loading, are capable of generating fugitive dust. However, fugitive dust generation can be minimized through the application of various control measures and work practices. In recognition of the potential for construction activities to generate fugitive dust, project-specific fugitive dust control measures were established. The fugitive dust control measures defined in the Response Plan are consistent with best available control measures and SCAQMD requirements for Rule 403 and included the application of water prior to excavation and at various times during the excavation activities.

As discussed in Appendix E of the Response Plan, exceedance of the dust action level would trigger additional watering or other appropriate control measures to reduce fugitive dust during remediation activities. The difference between upwind and downwind dust concentrations averaged over a one-hour monitoring period was compared to the dust action level, and increases in the water application rate and/or frequency were implemented during Phase 1 and Phase 2 removal activities when the

difference between upwind and downwind dust concentrations exceeded the dust action level. The same dust control measures will be implemented with dedicated DTSC staff overseeing dust monitoring during the upcoming Phase 3 cleanup.

It should be noted that the dust action level derived using the highest soil concentration detected at the site and the chronic reference exposure level for PCBs is highly conservative when considering average PCB levels and exposure lengths for the cleanup. Consequently, exceedance of the action level does not imply that elevated concentrations of PCBs are present in air (see the next section) nor suggest adverse health effects due to site-related activities; it is simply used as a decision point in the field for implementing enhanced control measures to reduce dust levels.

Air Sampling and Analysis

Air samples were collected throughout the Phase 1 and Phase 2 remediation activities. As indicated in Appendix E of the Response Plan, real-time monitors for PCBs were not available. Thus, the air sampling equipment was setup adjacent to the downwind dust monitoring point and air samples were collected over the duration of the day's activities; a period of approximately five to eight hours. Air sampling for PCBs was performed using a constant flow air sampling pump and a sample cassette consisting of a combination of glass fiber filter and solid sorbent (Florisil tube). In the event that the wind direction changed during the course of the day, the sampling locations were adjusted accordingly.

During the Phase 1 excavation activities, field activities were performed on 32 separate days between April 29 and July 14, 2009. Air samples were obtained for analysis of PCBs via NIOSH Method 5503 Modified on 30 of the 32 field days. PCBs were not detected above laboratory analytical detection limits in any of the 30 downwind air samples collected during Phase 1 remediation activities.

During the Phase 2 excavation, field activities were performed on 128 separate days between July 12, 2013 and January 30, 2014. A total of 54 daily air samples were obtained for analysis of PCBs via NIOSH Method 5503 Modified. The frequency of air sampling exceeded the frequency specified in the Response Plan. Specifically, air samples were collected daily during the first two weeks of excavation and twice a week thereafter. PCBs were not detected above laboratory analytical detection limits (0.000027 to 0.00055 mg/m^3) in any of the 54 downwind air samples collected during Phase 2 remediation activities. Thus, there were no PCBs detected in all 86 downwind air samples collected during the Phase 1 and Phase 2 excavation activities.

The complete laboratory reports for the Phase 1 and Phase 2 air samples are available on the DTSC Envirostor website (http://www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=33490087).

Because some of the laboratory detection limits for the Phase 1 and Phase 2 samples were elevated, a different analytical method with lower detection limits (U.S. EPA Air Method TO-10A) will be used in air sampling for the upcoming Phase 3 soil removal.

The consultant performing the work, TRC, did not perform analysis of personal exposure monitoring of contractor employees engaged in site activities as this responsibility rests with the contractor. By way of reference, the California Occupational Safety and Health Administration (CalOSHA) Permissible Exposure Limits (PEL) for PCBs range from 0.5 (Arolclor 1254) to 1.0 (Aroclor 1242) mg/m^3, and the CalOSHA PEL for nuisance particulates is 10 mg/m^3 (total dust). Conservatively assuming that PCBs were present in dust at the maximum concentration detected in soil and that the concentration of dust in air is equal to the nuisance particulate PEL for total dust, the maximum predicted PCB concentration in air would be 0.1 mg/m^3. This value is well below the PCB PEL of 0.5-1.0 mg/m^3, which means that the PCB PEL would not be exceeded when total dust concentrations meet the nuisance dust standard. Consequently, the nuisance dust PEL represents the primary occupational exposure standard for site workers.

Air sampling for dioxins (and furans) was contemplated in the Response Plan. However, at the established dust action level (7 $\mu g/m^3$) for the Phase 1 and Phase 2 cleanup, the maximum predicted concentration of dioxins in air would be 5.9×10^{-11} mg/m^3. This value is significantly below the Community Action Level of 7×10^{-9} mg/m^3 listed in Appendix E of the 2006 Response Plan, and thus dioxin/furan sampling was not conducted.

If you have any questions, please do not hesitate to contact me at (714) 484-5459 or e-mail Peter.Garcia@dtsc.ca.gov.

Sincerely,

Peter Garcia
Branch Chief
Department of Toxic Substances Control

Enclosure-April 11, 2016 E-mail from Bruce Bailey

cc: SeeNext Page.

cc: Mr. Gilbert Martinez
Director of Outreach
Senator Richard D. Roth
31st Senate District
State Capitol, 4034
gilbert.martinez@sen.ca.gov

Ms. Melanie Ling
Constituent Services Representative
Office of Congressman Mark Takano (CA-41)
3403 Tenth Street, Suite 610
Riverside, California 92501
Melanie.Ling@mail.house.gov

Mr. Al Zelinka, Assistant City Manager
City of Riverside
3900 Main Street
Riverside, California 92522

Mr. Moises Lopez
City of Riverside
3900 Main Street
Riverside, California 92522

Mr. Mark Steuer
City of Riverside
3900 Main Street
Riverside, California 92522

Dr. Cher Snyder
Assistant Deputy Executive Officer
Engineering and Compliance
South Coast Air Quality Management District - SCAQMD
21865 Copley Drive
Diamond Bar, CA 91765

Ms.Patrice Bowen
Chief, External Affairs
Office of Communications
patrice.bowen@dtsc.ca.gov

cc: Ms. Dot Lofstrom, PG
Division Chief
Brownfields and Environmental Restoration Program
dot.lofstrom@dtsc.ca.gov

Ms. Isabella Alasti
Attorney
Office of Legal Affairs
isabella.alasti@dtsc.ca.gov

From: investhazmat@aol.com [mailto:investhazmat@aol.com]
Sent: Monday, April 11, 2016 11:21 AM
To: Reese, Timothy@DTSC; Mascarenas, Ana@DTSC; Mataka, Arsenio@EPA
Cc: cmacduff@PE.com; penny.newman@ccaej.org; jean.kayano@ccaej.org; msoubirous@riversideca.gov; jburnard@riversideca.gov; pdavis@riversideca.gov; liza@consumerwatchdog.org; kevindaw@aol.com; regaffairs@aol.com
Subject: Re: Response to your inquiry

Dear Mr. Reese,

The dust action level of 7 ug/m3 is the **approved** level by DTSC for both phase 1 and 2 of the cleanup which makes it legally binding,(see page 7 of the Advanced GeoEnvironmental, Inc. Air Monitoring Workplan dated Oct., 2005)
The 7 ug/m3 action level is stated on the bottom of both phase 1 and phase 2 dust monitoring log sheets.

Your calculations after the fact and unfounded have no legal basis and does not excuse DTSC from enforcing the only approved legal action level. First you made the huge assumption that the PM10 PCB action level has a linear relationship to the site PCB soil concentrations, this is unfounded and has no factual basis in the fundamentals of soil chemistry principles of adsorption and Van der Waals forces. The small PM10 particles have a fraction of the adsorption capacity as larger soil particles and since the site is mainly comprised of particles over 10 microns this invalidates the comparison. Also, the PM10 particles are composed of different types of media such as clay, sand, organic matter and each has a different PCB adsorption capacity. Since the PM10 PCB capacity would be saturated at extremely low levels, the 7ug/m3 should stand throughout the project.

It also appears that you failed to review the phase 1 and phase 2 dust monitoring logs that clearly show that the dust levels were well above the 7ug/m3 for many hours over many days without any work stoppage or corrective action taken.

The legally binding approved GeoEnvironmental Workplan (page 7) states that section 25323 of the California Health and Safety Code requires that personal monitoring for airborne concentrations of toxic contaminants be conducted at regular intervals during the excavation; this indicates that each worker onsite should have been fitted with a sample cassettes. Please provide the PCB lab analysis for the workers.
The workplan also states that the NIOSH Method 5503 is being used for monitoring downwind of the daily excavation; **first NIOSH 5503 is only appropriate for a workers breathing zone and when modified indoor air sampling** and would not provide valid results for outdoor air sampling.
Federal EPA document(EPA-600-4-78-048, August/1987) A Method for Sampling and Analysis of PCBs in Ambient Air details the need for sampling large volumes of air and details the accepted method for PCB sampling of outdoor air.
NOTE: air sampling for PCB should have been performed on opposite sides of the project since the wind changes at routine times of the day. Please address this issue.

Also, the action level set for the PCB air samples was .00007mg/m3 but the lab had lab reporting limit varied from .00010mg/m3 to .00038mg/m3 therefore action level would not be detected.

The legally binding approved Workplan also states that the sampling would be .conducted daily during the first two weeks of the excavation and if the action level was not exceeded

PCB monitoring would be reduced to twice weekly. I only received lab analysis for two weeks for both phase 1 and phase 2, please provide this documentation.
The legally binding workplan indicates that dioxin(TCDD) with a Maximum soil concentration of 3.85E-04mg/kg had an action level of 7E-09mg/m3 and therefore should have 8hr. samples taken. Please provide the lab analysis or a detaled explanation of why this wasn't done.

Please provide a detailed response to each item that I have brought to your attention prior to any excavation onsite. Also provide a dated approved 2016 Air Monitoring Plan prior to any soil excavation.

Thank you for providing the documents. If you have any questions, please contact me at 909-709-3180.

Sincerely,

Bruce Bailey
B.S. Civil Engineering
A.S. Fire Technology
Retired Hazardous Materials Management Specialist
Former County Haz Mat Response Team member
Former Water District Project Engineer
CCAEJ Member/Advisor

----Original Message-----
From: Reese, Timothy@DTSC <Timothy.Reese@dtsc.ca.gov>
To: investhazmat <investhazmat@aol.com>
Sent: Thu, Apr 7, 2016 3:51 pm
Subject: Response to your inquiry

Mr. Bailey;

We received your email dated March 30, 2016 in which you inquire about three issues. The following is a response to the issues you identified:

2006 Dust Action Level

The dust action level of 7 µg/m^3 you refer to is located in Appendix E - Air Monitoring Work Plan, of the 2006 Response Plan prepared by Advanced GeoEnvironmental, Inc. This action level was derived using the highest PCB concentration (9,560 mg/kg) detected at the site prior to the Phase 1 cleanup in 2009. By comparison, the average (95% UCL) PCB concentration for the site was only 448 mg/kg at that time, which would have been a more realistic representation of PCB levels that could be carried by dust during the Phase 1 cleanup. The dust action level was derived using the highest PCB concentration on site, and was considered to be a very conservative value that would be indicative of the potential for elevated levels of PCBs in dust. Exceedance of the action level was used to trigger additional watering or other

appropriate control measures to reduce fugitive dust (see Page 7 of the Air Monitoring Work Plan). Exceedance of the action level was not an indicator that elevated concentrations of PCBs were present in air. In summary, dust action levels were used as a decision point to implement enhanced control measures to reduce dust levels.

It should be noted that the dust action level of 7 $\mu g/m^3$ was specific to the Phase 1 cleanup and not relevant for the subsequent cleanup where the remaining PCB concentrations were significantly lower. For example, a dust threshold for the Phase 2 (2013-14) cleanup can be estimated to be approximately 1,400 $\mu g/m^3$ based on the highest residual PCB concentration of 50 mg/kg after Phase 1 cleanup. All dust monitoring data collected during the Phase 2 cleanup was significantly below this threshold.

Air Monitoring Data for PCBs during Phase 1 and Phase 2 Cleanup

Actual PCB concentrations in air were measured in accordance with the PCB monitoring procedures specified in Section 3.4 of the Work Plan described above. PCBs were not detected in the air samples collected at the property boundary during Phase 1 and Phase 2 cleanup. The laboratory analytical results for the samples collected during these cleanup activities can be found on the DTSC Envirostor website:
Phase 1 (2009) air monitoring data:
http://www.envirostor.dtsc.ca.gov/regulators/deliverable_documents/2084416031/Ag%20Park%20Ph%201%20Impl%20Rpt%20-%20App%20D.pdf
Phase 2 (2013-14) air monitoring data:
http://www.envirostor.dtsc.ca.gov/regulators/deliverable_documents/7364622354/EMSL.pdf

Air Monitoring Plan for April 2016 Cleanup Activities

The Air Monitoring Plan for the 2006 Response Plan is available on Envirostor by accessing the following link:
http://www.envirostor.dtsc.ca.gov/regulators/deliverable_documents/4605503678/2006-0619%20Revised%20Response%20Plan%20Riverside%20Agricultural%20Park%20-%20Appendices%20Part%201.pdf

As stated in the DTSC March 21, 2016 letter regarding Conditional Approval of the 2016 Soil Sampling and Excavation Work Plan (attached), the South Coast Air Quality Management District (SCAQMD) reviewed and provided comments on the 2006 Air Monitoring Plan. The Air Monitoring Plan is currently being updated to address the SCAQMD comments, and will be provided to you when it is finalized. In the meantime, please contact me if you have any questions.

Regards,

Tim Reese

Office of Communications
Department of Toxic Substances Control
California Environmental Protection Agency
916.323.3395

Sign up for our DTSC News Feed